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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,255

04/01/2004

Andrew C. Davidson

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EXAMINER

PHAN, HANH

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/816,255	<b>Applicant(s)</b> DAVIDSON, ANDREW C.	
	<b>Examiner</b> Hanh Phan	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's election without traverse of Group I directed to claims 1-26 in the reply filed on 04/24/2007 is acknowledged. And, Claims 27-34 are cancelled.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe (US Patent No. 5,896,211).

Regarding claims 1 and 15, referring to Figure 4, Watanabe teaches a system for use in optical measurement and/or inspection of sub-surface features in layered media, the system comprising:

an optical-to-electrical (OE) circuit (i.e., optical detector 35, Fig. 4) configured to convert an optical signal into a first electrical signal, wherein the optical signal includes a plurality of wavelengths (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50);

a demodulating circuit (i.e., demodulators 37-1 to 37-m, Fig. 4), wherein the demodulating circuit is coupled to receive the first electrical signal from the OE circuit and a demodulating signal, and wherein the demodulating circuit is further configured to provide as an output a second electrical signal, wherein the demodulating signal and

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the second electrical signal each correspond to one of the plurality of wavelengths (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 2 and 16, Watanabe further teaches the system further includes an output optics unit coupled to provide the optical signal to the OE circuit, wherein the output optics unit is coupled to receive a beam of light (i.e., Fig. 1, col. 1, lines 65-67 and col. 2, lines 1-14).

Regarding claims 3, 4 and 17, Watanabe further teaches the beam of light is a reflected beam of light or is a diffracted beam of light (i.e., Figs. 1 and 4).

Regarding claims 5 and 18, Watanabe further teaches the output optics unit is coupled to provide the optical signal to a plurality of OE circuits, wherein each of the OE circuits is coupled to one of a plurality of demodulating circuits, and wherein the plurality of OE circuits and the plurality of demodulating circuits form a demultiplexer (i.e., Figs. 1, 4, 5, 16 and 17, col. 1, lines 65-67, col. 2, lines 1-14, col. 4, lines 52-67, col. 5, lines 1-67 and col. 6, lines 1-32).

Regarding claims 6 and 19, Watanabe further teaches the system further includes an optical multiplexer (i.e., optical mixer 38, Fig. 4), wherein the optical multiplexer is coupled to receive a plurality of light beams, wherein each of the plurality of light beams has a different wavelength with respect to other ones of the plurality of light beams (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 7 and 20, Watanabe further teaches the optical multiplexer (i.e., optical mixer 38, Fig. 4) is coupled to a plurality of light sources (i.e., light sources

33, Fig. 4), wherein each of the plurality of light sources provides one of the plurality of light beams (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 8 and 21, Watanabe further teaches each of the plurality of light sources is coupled to a modulator, wherein the modulator is configured to provide a modulating signal (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 9 and 22, Watanabe further teaches each of the plurality of light sources is modulated by a directly modulated diode (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 10 and 23, Watanabe further teaches the optical multiplexer (i.e., optical mixer 38, Fig. 4) is positioned to project an incident light beam onto a surface, wherein the incident light beam includes wavelengths corresponding to each of the plurality of light beams (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claims 11-13 and 24-26, Watanabe further teaches the optical multiplexer (i.e., optical mixer 38, Fig. 4) performs frequency division multiplexing and the demultiplexer performs frequency division demultiplexing or the optical multiplexer performs time division multiplexing and the demultiplexer performs time division demultiplexing or the optical multiplexer performs code division multiplexing and the demultiplexer performs code division demultiplexing (i.e., Fig. 4, col. 4, lines 52-67 and col. 5, lines 1-50).

Regarding claim 14, Watanabe further teaches the system is implemented in a lithography system (i.e., Figs. 1-24).

**Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Puc et al (US Patent No. 6,604,872) discloses optical communication systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
**HANH PHAN**  
**PRIMARY EXAMINER**